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Farm Mobilization **FACT SHEET**

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Save Farm-Stored Grain From Insects

Stored-grain insects are found wherever grain is grown. In the South, they fly to the fields and infest maturing kernels. Most infestation, however, originates in farm storage, where insects abound in wooden bins and in old left-over feed and grain around and in farm buildings.

This year with the Nation's special need to grow and save all the grain possible, especially feed grains, it is essential to get these storage insects under control. Fortunately this insect population can be quickly reduced by providing tight, easily-cleaned storage facilities and using modern control methods.

The steps necessary in such a control program are presented in this fact sheet, which is designed as source material for Extension workers and radio and press people who furnish information to farmers. Farmers should be advised to consult their county agents and other specialists.

ONE -- REDUCE INSECT ATTACKS IN THE FIELD

Although most grain in the field at harvest time in the United States is free from insect infestation, insects do infest such grain in certain areas.

Wheat -- The Angoumois grain moth, which attacks wheat in the field in regions where soft winter wheat is grown, can be controlled by early harvesting since field infestation is relatively light. Getting the wheat out of the fields early keeps the moths from getting a good start and fewer insects are carried into storage. Once in storage, damage from the moths is minimized since the soft-bodied moths cannot make their way below the surface of the grain to lay their eggs.

Corn--In the South, field infestations by weevils, moths, and other flying insects are extensive. Where they do attack, they can be greatly reduced by planting varieties of corn least susceptible to insects in the field. Also, before corn is in the silking stage, infested grain or feed stored in nearby farm buildings should be fumigated or destroyed. And harvesting should be done early so insects cannot get a start in the corn.

In the Northern States, insects which infest corn in the field do little damage, since low winter temperatures kill insects in crib-stored corn.

Rice--Rice in the field is subject to the same species of insects that attack corn. To cut down these attacks in the field, all old grain, feed, and sweepings in nearby warehouses, farm buildings, and grain storages should be fumigated or destroyed before the new crop of rice heads. Also, planting corn or sorghum near rice fields should be avoided.

Sorghum Grain--The Angoumois grain moth is a common pest in the fields everywhere sorghums are grown. In the South, weevils and other flying insects are also troublesome. These can be prevented by eliminating sources of infestation in nearby farm buildings, by harvesting promptly, binning and drying when necessary.

Storing sorghum grain in the head is not a good idea since the Angoumois moth is protected inside the heads and so carried into storage. In storage, whole heads of sorghum are subject to more damage than when broken into kernels since the moths can work their way more easily through the loosely-piled heads than through the more closely-packed kernels of grain.

TWO -- DESTROY FIELD INFESTATION

In general, it is good insurance to fumigate small grains and shelled corn as soon as possible after they are binned. In the South, field infestations of corn, rice, and sorghum grain also call for prompt drying after harvest.

THREE -- PROVIDE SAFE STORAGE

Farm storage should be clean, insect-free, bird- and rodent-proof, and weather-proof. Steel bins are especially easy to keep clean and insect-proof.

Wooden bins that are used year after year become heavily infested with insects which honeycomb the woodwork with their burrows, thereby providing fairly secure hiding places. They quickly infest grain that is stored in old bins.

These insects cannot be eliminated by ordinary cleaning methods. But spraying as soon as bins are emptied and as long as possible before they are re-filled will kill most of the insects that emerge from the burrows and cracks.

For treating wooden bins, sprays containing 2.5 percent by weight of DDT or methoxychlor or ones containing 0.5 percent pyrethrum or allethrin have been found satisfactory. Either emulsions or water suspensions made with wettable powder may be used. The sprays should be applied at the rate of 2 gallons per 1000 square feet of surface area. They can be safely and easily applied with an ordinary garden or power sprayer.

Bins should be made tight enough to keep out all rain or snow. Insects are attracted to high-moisture grain and breed in it much faster than in dry grain. A tight bin is also essential for effective fumigation.

FOUR -- CLEAN OUT SOURCES OF NEW INFESTATION

Waste grain and feed which accumulates around the farm, as well as infested grain and feed on hand, can be the source of new infestation -- endangering grain growing in fields near the farmstead and fresh, clean grain that is stored on the farm after harvest. It is essential to clean out all possible sources of insects before growing grain has a chance to become infested and before new grain is put in storage.

FIVE -- KEEP GRAIN WHOLE, DRY, FREE FROM DUST

Grain that is dry and free from grain dust and broken kernels is safer from insects than moist, dirty, cracked grain -- which insects prefer. Grain in good condition will remain that way almost indefinitely unless temperatures are abnormally high or there are nearby sources of infestation.

With the exception of sorghum grain and rice, small grains are usually dry enough at harvest time for safe storage. But corn, sorghum grain and rice should be dried to safe moisture levels. For long-time storage, a moisture content of less than 12 percent is necessary in most regions of the country.

To prevent breakage of kernels in handling, proper loading machinery should be used. Shelled corn should also be cleaned before storage.

SIX -- INSPECT FREQUENTLY

Stored grain should be inspected at least once a month during periods when the temperature exceeds 70 degrees F during the day. The grain should be checked both for the presence of insects and for heating.

If grain probes are available, samples of grain for screening can be taken from several parts of the bin. Otherwise, samples taken from just below the surface of the south side of the bin should be examined. Samples can be shaken on a screen fine enough to hold the grain but open enough to let insects pass through on cloth or paper where they can easily be seen.

SEVEN -- FUMIGATE WEEVILY OR HEATED GRAIN

If weevils are present or the grain is heating due to the presence of bran beetles, grain should be fumigated. Since the grain cannot be moved, the fumigant must be applied uniformly. The grain should form a level surface at least 6 inches below the top of the bin. If the surface of the grain is caked or webbed, it should be broken up by raking several inches deep before fumigating. The fumigant should be applied from outside the bin with a bucket pump or other type of sprayer. Those handling fumigants should be careful not to expose themselves to the vapors.

Fumigants recommended are the 3 to 1 mixture of ethylene dichloride-carbon tetrachloride or the 1 to 4 mixture of carbon disulphide and carbon tetrachloride. Dosages recommended are 6 gallons for each 1,000 bushels of grain in tight, well-built bins. For shallow bins, or more loosely built bins, or for treating grain sorghums, the dosage should be increased to 8 gallons.

